TCEQ Interoffice Memorandum

To: Tony Walker

Director, TCEQ Region 4, Dallas/Fort Worth

Alyssa Taylor

Special Assistant to the Regional Director, TCEQ Region 4, Dallas/Fort Worth

From: Jennifer McKinney, Ph.D.

Toxicology Division, Office of the Executive Director

Date: January 06, 2017

Subject: Toxicological Evaluation of Results from an Ambient Air Sample for Volatile

Organic Compounds collected Upwind of Atmos Energy Corporation – Huckabay Compressor Station (Latitude 32.326140, Longitude -98.303500) near Huckabay,

Erath County, Texas

Sample Collected on November 29, 2016, Request Number 1612001 (Lab Sample

1612001-001)

Key Points

• Reported concentrations of target volatile organic compounds (VOCs) were either not detected or were detected below levels of short-term health and/or welfare concern.

Background

On November 29, 2016, a Texas Commission on Environmental Quality (TCEQ) Region 4 air investigator collected a 30-minute canister sample (Lab Sample 1612001-001) upwind of Atmos Energy Corporation – Huckabay Compressor Station near Huckabay, Erath County, Texas (Latitude 32.326140, Longitude -98.303500). The sample was taken due to a citizen complaint of an overwhelming mercaptan odor and an eye infection. The investigator experienced a very light to moderate mercaptan odor but no health effects while sampling. Meteorological conditions measured at the site or nearest stationary ambient air monitoring site indicated that the ambient temperature was 61°F with a relative humidity of 38%, and winds were from the south southwest (200°) at 2.3-2.7 miles per hour. The sampling site was located within 0-100 feet from the possible emission sources (multiple). The nearest location where the public could have access was 301-500 feet from the possible emission sources. The sample was sent to the TCEQ laboratory in Austin, Texas, and analyzed for a range of VOCs. The list of the target analytes that were evaluated in this review is provided in Attachment A. The VOC concentrations were reported in parts per billion by volume (ppbv) (Attachment B and Table 1). Please note that the

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available canister technology and analysis method cannot capture and/or analyze for all chemicals.

Results and Evaluation

Reported VOC concentrations were compared to TCEQ's short-term health- and/or welfare-based air monitoring comparison values (AMCVs) (Table 1). Short-term AMCVs are guidelines used to evaluate ambient concentrations of a chemical in air and to determine its potential to result in adverse health effects, adverse vegetative effects, or odors. Health AMCVs are set to provide a margin of safety and are set well below levels at which adverse health effects are reported in the scientific literature. If a chemical concentration in ambient air is less than its comparison value, no adverse health effects are expected to occur. If a chemical concentration exceeds its comparison value it does not necessarily mean that adverse effects will occur, but rather that further evaluation is warranted.

All of the 84 VOCs were either not detected or were detected below their respective short-term AMCVs. Exposure to levels of VOCs measured in this sample would not be expected to cause short-term adverse health effects, adverse vegetative effects, or odors.

Please call me at (512) 239-1785 you have any questions regarding this evaluation.

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Attachment A

List of Target Analytes for Canister Samples

ethane ethylene acetylene propane propylene dichlorodifluoromethane methyl chloride isobutane vinyl chloride 1-butene 1.3-butadiene n-butane t-2-butene bromomethane c-2-butene

3-methyl-1-butene

isopentane

trichlorofluoromethane

1-pentene n-pentane isoprene t-2-pentene

1,1-dichloroethylene

c-2-pentene

methylene chloride 2-methyl-2-butene 2,2-dimethylbutane cyclopentene

4-methyl-1-pentene 1,1-dichloroethane cyclopentane 2,3-dimethylbutane 2-methylpentane 3-methylpentane

2-methyl-1-pentene + 1-hexene

n-hexane chloroform t-2-hexene c-2-hexene

1.2-dichloroethane methylcyclopentane 2,4-dimethylpentane 1,1,1-trichloroethane

benzene

n-heptane

carbon tetrachloride

cyclohexane 2-methylhexane 2,3-dimethylpentane 3-methylhexane 1,2-dichloropropane trichloroethylene 2,2,4-trimethylpentane 2-chloropentane

c-1,3-dichloropropylene methylcyclohexane

t-1,3-dichloropropylene 1,1,2-trichloroethane 2,3,4-trimethylpentane

toluene

2-methylheptane 3-methylheptane 1.2-dibromoethane

n-octane

tetrachloroethylene chlorobenzene ethylbenzene m & p-xylene

styrene

1,1,2,2-tetrachloroethane

o-xylene n-nonane

isopropylbenzene n-propylbenzene m-ethyltoluene p-ethyltoluene

1,3,5-trimethylbenzene

o-ethyltoluene

1,2,4-trimethylbenzene

n-decane

1,2,3-trimethylbenzene m-diethylbenzene p-diethylbenzene n-undecane

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12/20/2016

Texas Commission on Environmental Quality

Laboratory and Quality Assurance Section P.O. Box 13087, MC-165 Austin, Texas 78711-3087 (512) 239-1716

Laboratory Analysis Results Request Number: 1612001

Request Lead:Frank Martinez

Region: T04

Date Received: 12/1/2016

Project(s): Barnett Shale

Facility(ies) Sampled	City	County	Facility Type
Atmos Energy- Huckabay Compressor Station	Huckabay	Erath	

Sample(s) Received

Field ID Number: N0473-175-1116

Laboratory Sample Number: 1612001-001

Sampled by: Megan Horton

Date & Time Sampled: 11/29/16 07:29:00 Valid Sample: Yes Sampling Site:

Comments: Canister N0473 was used to collect a 30-minute upwind sample using OFC# 175.

Requested Laboratory Procedure(s):

AP001VOC Analysis:

Determination of VOCs in Canisters by GC/MS Using Modified Method TO-15

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on the analytical procedures please contact the laboratory manager at (512) 239-1716. For an update on the health effects evaluation of these data, please contact the Toxicology Division at (512) 239-1795.

Analyst:

Jinhua Li

Laboratory Manager

Laboratory Analysis Results Request Number: 1612001

Analysis Code: AP001VOC

Note: Results are reported in uni	us or ppov									
Lab ID			1612	2001-001						
Field ID		N0473-175-1116								
Canister ID			1	10473						
Compound	Conc.	SDL	SQL	Analysis Date	Flags**	Conc.	SDL	SQL	Analysis Date	Flags**
ethane	270	2.0	4.8	12/8/2016	T,D2					
ethylene	ND	1.0	2.4	12/6/2016	T,D1					
acetylene	ND	1.0	2,4	12/6/2016	T,DI					
propane	22	1.0	2.4	12/6/2016	T,D1					
propylene	ND	1.0	2.4	12/6/2016	T,D1		Trans.			
dichlorodifluoromethane	0.43	0.40	1.2	12/6/2016	L,D1					
methyl chloride	0.53	0.40	1.2	12/6/2016	L,DI					
isobutane	1.0	0.46	2.4	12/6/2016	L,DI					
vinyl chloride	ND	0.34	1.2	12/6/2016	DI			0		
1-butene	ND	0.40	1.2	12/6/2016	DI					
1,3-butadiene	ND	0.54	1.2	12/6/2016	DI					
n-butane	3.1	0.40	2.4	12/6/2016	DI	1				
t-2-butene	ND	0.36	1.2	12/6/2016	D1					
bromomethane	ND	0.54	1.2	12/6/2016	D1					
c-2-butene	ND	0.54	1.2	12/6/2016	DI	1			1	
3-methyl-1-butene	ND	0.46	1.2	12/6/2016	DI	1				
isopentane	0.60	0.54	4.8	12/6/2016	L,D1					
trichlorofluoromethane	0.22	0.58	1.2	12/6/2016	J,D1	1			1	
1-pentene	ND	0.54	1.2	12/6/2016	DI	1				
	0.52	0.54	4.8	12/6/2016	J,DI	-	-	-	-	
n-pentane	ND	0.54	1.2	12/6/2016	DI	-	-	-		
isoprene	ND	0.54	2.4	12/6/2016	DI	+				
t-2-pentene	-	-	-	12/6/2016	DI	1	-			
1,1-dichloroethylene	ND	0.36	2.4	12/6/2016	DI	-		-		
c-2-pentene	ND 0.07	0.50	1.2	12/6/2016	J,DI	+		-		
methylene chloride			-		DI	+				
2-methyl-2-butene	ND	0.46	1.2	12/6/2016	DI	-	-			
2,2-dimethylbutane	ND	0.42	1.2	12/6/2016	DI					
cyclopentene	ND	0.40	1.2	12/6/2016	DI	-	-	-		
4-methyl-1-pentene	ND	0.44	2.4	12/6/2016	1000					
1,1-dichloroethane	ND	0.38	1.2	12/6/2016	D1	-				
cyclopentane	0.04	0.54	1.2	12/6/2016	J,DI			-		
2,3-dimethylbutane	ND	0.56	2.4	12/6/2016	DI LDI					
2-methylpentane	0.11	0.54	1.2	12/6/2016	J,D1					
3-methylpentane	0.07	0.46	1.2	12/6/2016	J,D1			-		
2-methyl-1-pentene + 1-hexene	ND	0.40	4.8	12/6/2016	DI			-		
n-hexane	0.12	0.40	2.4	12/6/2016	J,D1	-		-		
chloroform	0.02	0.42	1.2	12/6/2016	J,D1	-				
t-2-hexene	ND	0.54	2.4	12/6/2016	D1				-	
c-2-hexene	ND	0.54	2.4	12/6/2016	DI			-		
1,2-dichloroethane	ND	0.54	1.2	12/6/2016	DI					
methylcyclopentane	0.07	0.54	2.4	12/6/2016	J,D1					
2,4-dimethylpentane	ND	0.54	2.4	12/6/2016	DI					
1,1,1-trichloroethane	ND	0.52	1.2	12/6/2016	DI					
henzene	ND	0.54	1.2	12/6/2016	DI					
carbon tetrachloride	0.09	0.54	1.2	12/6/2016	J,D1					
cyclohexane	0.07	0.48	1.2	12/6/2016	J,D1					
2-methylhexane	ND	0.54	1.2	12/6/2016	D1		1			
2,3-dimethylpentane	ND	0.52	1.2	12/6/2016	DI					

Laboratory Analysis Results

Request Number: 1612001 Analysis Code: AP001VOC

				201 001		7				
Lab ID		i	1012	2001-001 Analysis		-			Analysis	
Compound	Conc.	SDL	SQL	Date	Flags**	Conc.	SDL	SQL	Date	Flags**
3-methylhexane	ND	0.40	1.2	12/6/2016	DI					
1,2-dichloropropane	ND	0.34	1.2	12/6/2016	DI					
trichloroethylene	ND	0.58	1.2	12/6/2016	DI					
2,2,4-trimethylpentane	ND	0.48	1.2	12/6/2016	DI					
2-chloropentane	ND	0.54	1.2	12/6/2016	DI					
n-heptane	0.04	0.50	2.4	12/6/2016	J,D1					
c-1,3-dichloropropylene	ND	0.40	1.2	12/6/2016	DI				1	
methylcyclohexane	0.04	0.52	2.4	12/6/2016	J,D1					
t-1,3-dichloropropylene	ND	0.40	1.2	12/6/2016	DI					
1,1,2-trichloroethane	ND	0.42	1.2	12/6/2016	D1					
2,3,4-trimethylpentane	ND	0.48	2.4	12/6/2016	DI					
toluene	0.06	0.54	1.2	12/6/2016	J,D1			B		
2-methylheptane	ND	0.40	2.4	12/6/2016	DI					
3-methylheptane	ND	0.46	2.4	12/6/2016	DI					
1,2-dibromoethane	ND	0.40	1.2	12/6/2016	DI	1				
n-octane	0.01	0.38	2.4	12/6/2016	J,D1	1				
tetrachloroethylene	ND	0.48	1.2	12/6/2016	DI					
chlorobenzene	ND	0.54	1.2	12/6/2016	DI					
ethylbenzene	ND	0.54	2.4	12/6/2016	DI			1		
m & p-xylene	ND	0.54	4.8	12/6/2016	DI					
styrene	ND	0.54	2.4	12/6/2016	DI					
1,1,2,2-tetrachloroethane	ND	0.40	1.2	12/6/2016	DI					
o-xylene	0.01	0.54	2.4	12/6/2016	J,DI		-			
n-nonane	ND	0.44	1.2	12/6/2016	DI					
isopropylbenzene	ND	0.48	1.2	12/6/2016	DI					Learn
n-propylbenzene	ND	0.54	1.2	12/6/2016	DI					
m-ethyltoluene	ND	0.22	1.2	12/6/2016	DI					
p-ethyltoluene	ND	0.32	2.4	12/6/2016	DI			9		
1,3,5-trimethylbenzene	ND	0.50	2.4	12/6/2016	DI					
o-ethyltoluene	ND	0.26	2.4	12/6/2016	DI					
1,2,4-trimethylbenzene	ND	0.54	1.2	12/6/2016	DI	1				
n-decane	ND	0.54	2.4	12/6/2016	DI		100	100		
1,2,3-trimethylbenzene	ND	0.54	1.2	12/6/2016	DI					
m-diethy/benzene	ND	0.54	2.4	12/6/2016	DI					
p-diethylbenzene	ND	0.54	1.2	12/6/2016	DI					
n-undecane	ND	0.54	2.4	12/6/2016	DI	1		1		

Laboratory Analysis Results Request Number: 1612001 Analysis Code: AP001VOC

Qualifier Notes:

- ND not detected
- NQ concentration can not be quantified due to possible interferences or coelutions.
- SDL Sample Detection Limit (Limit of Detection adjusted for dilutions).

 SQL Sample Quantitation Limit (Limit of Quantitation adjusted for dilutions).
- INV Invalid.
- J Reported concentration is below SDL.
- L Reported concentration is at or above the SDL and is below the lower limit of quantitation.
- E Reported concentration exceeds the upper limit of instrument calibration
- M Result modified from previous result.
 T- Data was not confirmed by a confirmational analysis. Compound and/or results is tentatively identified.
- F Established acceptance criteria was not met due to factors outside the laboratory's control.
 H Not all associated hold time specifications were met. Data may be biased.
 C Sample received with a missing or broken custody seal.

- R Sample received with a missing or incomplete chain of custody.
 I Sample received without a legible unique identifier.

- G Sample received in an improper container.
 U Sample received with insufficient sample volume.
 W Sample received with insufficient preservation.

Quality control notes for AP001VOC samples.

- D1-Sample concentration was calculated using a dilution factor of 4.01.
- D2-Sample concentration was calculated using a dilution factor of 8.06.

TCEQ laboratory customer support may be reached at Frank.Martinez@tceq.texas.gov

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Table 1. Comparison of Monitored Concentrations in Lab Sample 1612001-001 to TCEQ Short-Term AMCVs

Lab Sample ID	1612001-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
1,1,1-Trichloroethane		1,700	1.2	ND	D1	0.52
1,1,2,2-Tetrachloroethane		10	1.2	ND	D1	0.4
1,1,2-Trichloroethane		100	1.2	ND	D1	0.42
1,1-Dichloroethane		1,000	1.2	ND	D1	0.38
1,1-Dichloroethylene		180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene		3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene		3000	1.2	ND	D1	0.54
1,2-Dibromoethane		0.5	1.2	ND	D1	0.4
1,2-Dichloroethane		40	1.2	ND	D1	0.54
1,2-Dichloropropane		100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene		3000	2.4	ND	D1	0.5
1,3-Butadiene	230	1,700	1.2	ND	D1	0.54
1-Butene		27,000	1.2	ND	D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane		750	1.2	ND	D1	0.48
2,2-Dimethylbutane (Neohexane)		1,000	1.2	ND	D1	0.42
2,3,4-Trimethylpentane		750	2.4	ND	D1	0.48
2,3-Dimethylbutane		990	2.4	ND	D1	0.56
2,3-Dimethylpentane		850	1.2	ND	D1	0.52
2,4-Dimethylpentane		850	2.4	ND	D1	0.54
2-Chloropentane (as chloroethane)		240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene		500	4.8	ND	D1	0.4
2-Methyl-2-Butene		4500	1.2	ND	D1	0.46
2-Methylheptane		750	2.4	ND	D1	0.4

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Lab Sample ID	1612001-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
2-Methylhexane		750	1.2	ND	D1	0.54
2-Methylpentane (Isohexane)		850	1.2	0.11	J,D1	0.54
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46
3-Methylheptane		750	2.4	ND	D1	0.46
3-Methylhexane		750	1.2	ND	D1	0.4
3-Methylpentane		1,000	1.2	0.07	J,D1	0.46
4-Methyl-1-Pentene (as hexene)		500	2.4	ND	D1	0.44
Acetylene		25,000	2.4	ND	T,D1	1
Benzene		180	1.2	ND	D1	0.54
Bromomethane (methyl bromide)		30	1.2	ND	D1	0.54
c-1,3-Dichloropropylene		10	1.2	ND	D1	0.4
c-2-Butene		15,000	1.2	ND	D1	0.54
c-2-Hexene		500	2.4	ND	D1	0.54
c-2-Pentene		4,500	2.4	ND	D1	0.5
Carbon Tetrachloride		20	1.2	0.09	J,D1	0.54
Chlorobenzene (phenyl chloride)		100	1.2	ND	D1	0.54
Chloroform (trichloromethane)		20	1.2	0.02	J,D1	0.42
Cyclohexane		1,000	1.2	0.07	J,D1	0.48
Cyclopentane		1,200	1.2	0.04	J,D1	0.54
Cyclopentene		2,900	1.2	ND	D1	0.4
Dichlorodifluoromethane		10,000	1.2	0.43	L,D1	0.4
Ethane		*Simple Asphyxiant	4.8	270	T,D2	2
Ethylbenzene		20,000	2.4	ND	D1	0.54
Ethylene		500,000	2.4	ND	T,D1	1
Isobutane		33,000	2.4	1	L,D1	0.46

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Lab Sample ID	1612001-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
Isopentane (2-methylbutane)		68,000	4.8	0.6	L,D1	0.54
Isoprene	48	20	1.2	ND	D1	0.54
Isopropylbenzene (cumene)	130	500	1.2	ND	D1	0.48
m & p-Xylene (as mixed isomers)		1,700	4.8	ND	D1	0.54
m-Diethylbenzene		460	2.4	ND	D1	0.54
Methyl Chloride (chloromethane)		500	1.2	0.53	L,D1	0.4
Methylcyclohexane		4,000	2.4	0.04	J,D1	0.52
Methylcyclopentane		750	2.4	0.07	J,D1	0.54
Methylene Chloride (dichloromethane)		3,500	1.2	0.07	J,D1	0.28
m-Ethyltoluene		250	1.2	ND	D1	0.22
n-Butane		92,000	2.4	3.1	D1	0.4
n-Decane		1,750	2.4	ND	D1	0.54
n-Heptane		850	2.4	0.04	J,D1	0.5
n-Hexane		1,800	2.4	0.12	J,D1	0.4
n-Nonane		2,000	1.2	ND	D1	0.44
n-Octane		750	2.4	0.01	J,D1	0.38
n-Pentane		68,000	4.8	0.52	J,D1	0.54
n-Propylbenzene		500	1.2	ND	D1	0.54
n-Undecane		550	2.4	ND	D1	0.54
o-Ethyltoluene		250	2.4	ND	D1	0.26
o-Xylene		1,700	2.4	0.01	J,D1	0.54
p-Diethylbenzene		460	1.2	ND	D1	0.54
p-Ethyltoluene		250	2.4	ND	D1	0.32
Propane		*Simple Asphyxiant	2.4	22	T,D1	1
Propylene		*Simple Asphyxiant	2.4	ND	T,D1	1

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Lab Sample ID	1612001-001					_
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
Styrene	25	5,100	2.4	ND	D1	0.54
t-1,3-Dichloropropylene		10	1.2	ND	D1	0.4
t-2-Butene		15,000	1.2	ND	D1	0.36
t-2-Hexene		500	2.4	ND	D1	0.54
t-2-Pentene		4,500	2.4	ND	D1	0.54
Tetrachloroethylene		1,000	1.2	ND	D1	0.48
Toluene		4,000	1.2	0.06	J,D1	0.54
Trichloroethylene		100	1.2	ND	D1	0.58
Trichlorofluoromethane		10,000	1.2	0.22	J,D1	0.58
Vinyl Chloride		26,000	1.2	ND	D1	0.34

^{*}A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations. ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL – Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

- J Reported concentration is below SDL.
- L Reported concentration is at or above the SDL and is below the lower limit of quantitation.
- E Reported concentration exceeds the upper limit of instrument calibration.
- M Result modified from previous result.
- T Data was not confirmed by a confirmational analysis. Data is tentatively identified.
- F Established acceptance criteria were not met due to factors outside the laboratory's control.
- H Not all associated hold time specifications were met. Data may be biased.
- C Sample received with a missing or broken custody seal.
- R Sample received with a missing or incomplete chain of custody.

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- I Sample received without a legible unique identifier.
- G Sample received in an improper container.
- U Sample received with insufficient sample volume.
- W Sample received with insufficient preservation.
- D1 Sample concentration was calculated using a dilution factor of 4.01.
- D2 Sample concentration was calculated using a dilution factor of 8.06.

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Table 2. TCEQ Long-Term Air Monitoring Comparison Values (AMCVs)

Please Note: The long-term AMCVs are provided for informational purposes only because it is scientifically inappropriate to compare short-term monitored values to the long-term AMCV.

Compound	Long-Term Health AMCV (ppb _v)	Compound	Long-Term Health AMCV (ppb _v)
1,1,1-Trichloroethane	940	Cyclopentane	120
1,1,2,2-Tetrachloroethane	1	Cyclopentene	290
1,1,2-Trichloroethane	10	Dichlorodifluoromethane	1,000
1,1-Dichloroethane	100	Ethane	*Simple Asphyxiant
1,1-Dichloroethylene	86	Ethylbenzene	450
1,2,3-Trimethylbenzene	37	Ethylene**	5,300
1,2,4-Trimethylbenzene	37	Isobutane	2,400
1,2-Dibromoethane	0.05	Isopentane (2-methylbutane)	8,000
1,2-Dichloroethane	1	Isoprene	2
1,2-Dichloropropane	10	Isopropylbenzene (cumene)	50
1,3,5-Trimethylbenzene	37	m & p-Xylene (as mixed isomers)	140
1,3-Butadiene	9.1	m-Diethylbenzene	46
1-Butene	2300	Methyl Chloride (chloromethane)	50
1-Pentene	210	Methylcyclohexane	400
2,2,4-Trimethylpentane	75	Methylcyclopentane	75
2,2-Dimethylbutane (Neohexane)	100	Methylene Chloride (dichloromethane)	100
2,3,4-Trimethylpentane	75	m-Ethyltoluene	25
2,3-Dimethylbutane	99	n-Butane	2,400
2,3-Dimethylpentane	85	n-Decane	175
2,4-Dimethylpentane	85	n-Heptane	85
2-Chloropentane (as chloroethane)	24	n-Hexane	190
2-Methyl-1-Pentene +1-Hexene	50	n-Nonane	200
2-Methyl-2-Butene	210	n-Octane	75

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Compound	Long-Term Health AMCV (ppb _v)	Compound	Long-Term Health AMCV (ppb _v)
2-Methylheptane	75	n-Pentane	8,000
2-Methylhexane	75	n-Propylbenzene	50
2-Methylpentane (Isohexane)	85	n-Undecane	55
3-Methyl-1-Butene	800	o-Ethyltoluene	25
3-Methylheptane	75	o-Xylene	140
3-Methylhexane	75	p-Diethylbenzene	46
3-Methylpentane	100	p-Ethyltoluene	25
4-Methyl-1-Pentene (as hexene)	50	Propane	*Simple Asphyxiant
Acetylene	2,500	Propylene	*Simple Asphyxiant
Benzene	1.4	Styrene	110
Bromomethane (methyl bromide)	3	t-1,3-Dichloropropylene	1
c-1,3-Dichloropropylene	1	t-2-Butene	690
c-2-Butene	690	t-2-Hexene	50
c-2-Hexene	50	t-2-Pentene	210
c-2-Pentene	210	Tetrachloroethylene***	3.8
Carbon Tetrachloride	2	Toluene	1,100
Chlorobenzene (phenyl chloride)	10	Trichloroethylene	10
Chloroform (trichloromethane)	2	Trichlorofluoromethane	1,000
Cyclohexane	100	Vinyl Chloride	0.45

^{*}A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

^{**}Long-term vegetation AMCV for Ethylene is 30 ppb.

^{***}Long-term vegetation AMCV for Tetrachloroethylene is 12 ppb.